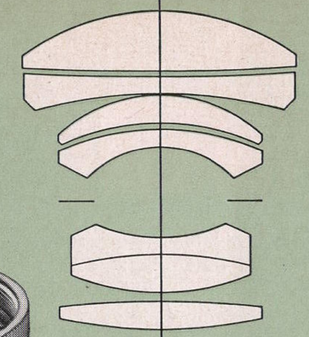
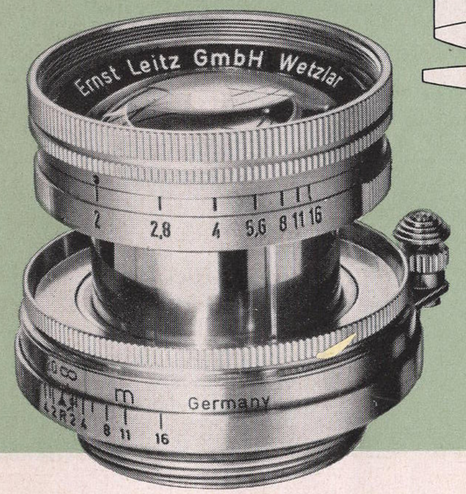
The general correction can be regarded as excellent, particularly with reference to the perfected anastigmatic flatness of the field. The advantages of symmetrical lens systems in correcting chromatic aberrations, especially higher order ones, have been fully utilized in the SUMMICRON. The outstanding performance is apparent already at full aperture in an unusually even and brilliant definition of fine detail over the whole field. Optimum image quality which normally requires appreciable stopping down, is reached at the large stop of f/4 with the SUMMICRON, yielding maximum contrast and resolution.

The demands for freedom from vignetting were, of course, carefully considered. On the SUMMICRON, too, the front component immediately attracts attention by its exceptional size for an f/2 lens. However, the increased front lens diameter and thus the greater width of oblique beams naturally add to the difficulties of dealing with aberrations. The extensive correction of all faults, together with the simultaneous reduction of vignetting, is therefore an important achievement in lens design. The SUMMICRON is therefore a miniature camera lens of the highest performance which favourably combines progress in glass technology with up-to-date developments in optical construction.

Equipment	Code
f/2 5 cm LEICA SUMMICRON lens in collapsible mount	SOOIC
LEICA III f with f/2 5 cm SUMMICRON	LUOOX
Push-on lens hood, collapsible (inside diameter of clamping ring 42 mm.)	SOOFM
Spare lens cap for SUMMICRON (42 mm. diameter)	ORQDO
Screw-in filters for the SUMMICRON:	
Yellow No. 0	HOOAR
Yellow No. 1	HOOBE
Green	HOOFG
Orange	HOOGU
Light red	HOOCS
Medium red	HOODF
Deep red	HOOET
Blue	HOOKI
U. V. (colourless, also suitable for colour photography)	HOOIV
Polarizing screen (neutral grey, also suitable for colour photography)	POOTR

List Photo No. 8540/Engl. · VIII/53/LY. · Printed in Germany · A. Leipscher Wetzlar



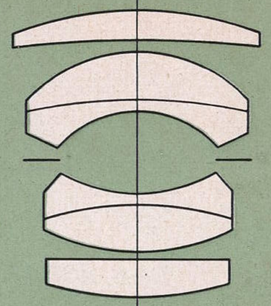


SUMMICRON f/2 5 cm

The New High-Class Lens for the LEICA

The f/2 5 cm SUMMICRON is the latest creation of the LEITZ works. It offers the highest standard of performance attainable with the help of present-day developments in optical design and with the introducing of new types of highly refracting optical glass. The lens combines perfect correction with a freedom from vignetting that is exceptional at such a large aperture. Even at its largest stop the SUMMICRON yields outstanding resolution and unusually high contrast. Its excellent degree of correction is shown by the fact that it reaches its optimum definition already at f/4.

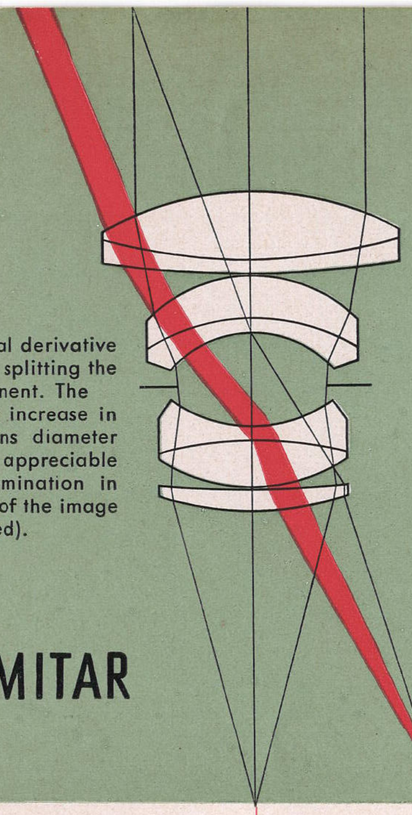
Leitz



The sectional drawing shows the first f/2 LEICA lens as a normal symmetrical construction.

THE SUMMAR

The first high-speed LEICA lens with the large aperture of f/2 was the 5 cm SUMMAR. It was a symmetrical lens with two simple converging elements outside, and two cemented components inside. This system was chosen because it is particularly suitable for achieving high speed with a relatively large angle of view. The principle of the symmetrical type of construction offers unusually favourable conditions for the correction of aberrations. That applies especially to the extensive elimination of chromatic faults. Although developed some twenty years ago, the SUMMAR is therefore still highly valued by its owners and used with great success. Anti-reflection coating, as generally applied to lens surfaces nowadays, will further enhance the value of the SUMMAR. Symmetrical type lenses especially give much more brilliant images after coating.



A symmetrical derivative obtained by splitting the front component. The simultaneous increase in the front lens diameter results in an appreciable gain of illumination in the corners of the image (shown in red).

THE SUMMITAR

To meet the demands of colour photography for maximum freedom from vignetting, the SUMMITAR appeared as a development of the SUMMAR. The new lens featured an appreciably larger front component than was required for that aperture, noticeably increasing the diameter of oblique light beams, and thus the amount of light reaching the corners of the image. This factor enabled the degree of vignetting usually found in high-aperture lenses to be greatly decreased. Such vignetting is particularly disturbing in colour photography and was therefore reduced to an acceptable level in the SUMMITAR.

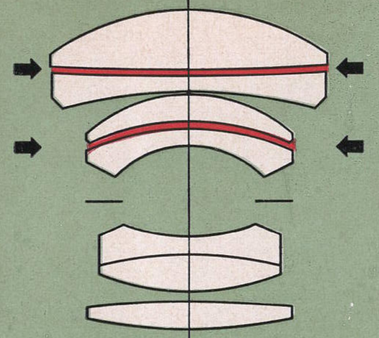
Shape of visible iris aperture:

At the margins

In the lens axis

The effect is illustrated in the diagram.

In addition, the front component, consisting of one element in the SUMMAR, was replaced in the SUMMITAR by two cemented lenses. This opens up new ways of introducing corrections which were utilized to improve the overall definition. Colour correction was also carried further, leaving even higher order aberrations negligible. The SUMMITAR, as a perfected symmetrical derivative, therefore represents a high class lens which will give the very best results in black-and-white and colour photography alike.



Leitz

The SUMMICRON features new highly refracting glasses and further correction by means of air spaces.

THE SUMMICRON

Optical design has always been greatly influenced by advances in glass technology. So LEITZ naturally decided to utilize the discovery of new highly refracting glasses, the so-called lanthanum crown glasses, to compute new lens systems. The uncommonly high standard of performance achieved with the latest SUMMICRON lens is therefore essentially based on the use of these modern glass types. This system is also a derivative of the symmetrical design, with additional air spaces to give further important means of correction. In this way it became possible to eliminate, in addition to other faults, most of the spherical aberrations of oblique rays. This normally presents special difficulties with high-speed lenses. As a result the brilliance of the image in the marginal zones has greatly increased.